

고관절 골절 수술후 발생한 섬망환자의 치과보철물에 의한 폐렴

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— Abstract —

Dental Prosthesis Causing Pneumonia in a Delirious Elderly Patient after Hip Fracture Surgery

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We report a case of delayed diagnosed pneumonia due to an aspirated metallic crown, which had been detached from a molar tooth. Dental prosthesis should be checked and a careful review of the chest radiograph is mandatory when an elderly patient with delirium after hip fracture surgery develops pneumonia postoperatively. (J Korean Soc Traumatol 2012;25:97-100)

Key Words: Pneumonia, Aspiration, Delirium, Delayed diagnosis

I. Introduction

Pneumonia related with aspiration is a frequent complication after hip fracture surgery (HFS) in elderly patients. The most frequent aspirate is food material.(1, 2) At immediate postoperative periods, patients who underwent HFS is also vulnerable to delirium, which is characterized by a change in mental status with attention and awareness deficits, and loss of cognitive and perceptive functions.(3, 4) We report a case of an unexpected pulmonary complication in delirious patient after HFS.

II. Case Report

A 78-year-old woman, who sustained an intertrochanteric fracture on her left hip, was admitted via emergency room. She had a history of pulmonary tuberculosis that was treated and cured by medication. In preoperative evaluation, chest radiograph showed an atelectasis in the right lower lung (Fig. 1) and pulmonary function test revealed a severe restrictive pattern. Fiberoptic bronchoscopy was performed, which revealed multiple endobronchial strictures. These lesions were considered as sequelae of previous tuberculosis. She underwent a cementless bipolar hemi-

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Fig. 1. Preoperative chest radiograph shows atelectasis in right lower lung.

arthroplasty under a spinal anesthesia. No special event occurred during the operation. However, the patient was delirious postoperatively. After consultation to a neuropsychiatrist, antipsychotic drug was administered to the patient, and ward environment was controlled to be stable, quiet, and well-lighted.

On the postoperative day 3, she had a fever and dyspnea. Her body temperature was 38.6°C and oxygen saturation was 87% on room air. Chest auscultation revealed wheezing and crackles on the right chest. The patient was intubated for dyspnea and transferred to intensive care unit. On the chest radiograph undertaken in intensive care unit, pneumonic infiltration was observed in the right lower lung, and systemic antibiotics (Piperacillin/Tazobactam) were administered to treat pneumonia. Although systemic antibiotics were administered under impression of pneumonia, symptoms did not improve and repeat chest radiograph showed worsening of infiltrates in the right lower lung. On the postoperative day 5, we found a radio-opaque substance in her right lower lobe bronchus in the chest radiograph. A retrospective review of the previous chest radiographs revealed that the material first appeared in the radiograph, which was taken on the postoperative day 3, (Fig. 2-A and

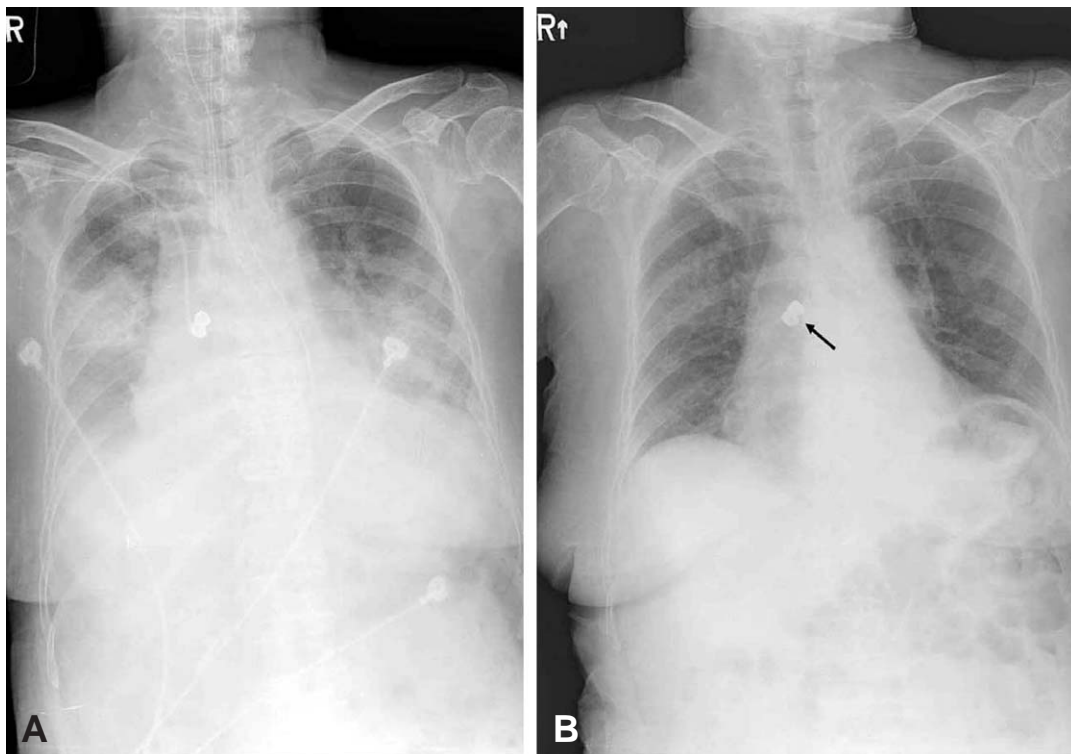


Fig. 2. (A). Chest radiograph, which was taken on postoperative day 5, shows persistent pneumonic infiltration in the right lower lung. **(B).** Chest radiograph, which was taken on postoperative day 3, shows pneumonic infiltration in the right lower lung. It also shows a radio-opaque substance in the right lung (arrow).

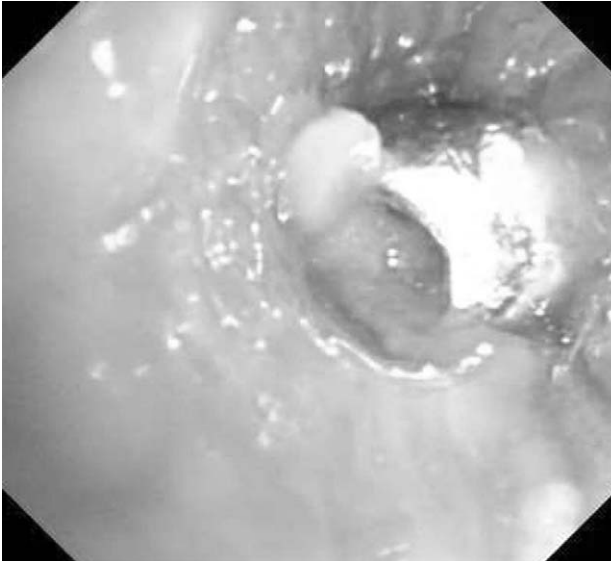


Fig. 3. Fiberoptic bronchoscopy shows a metallic crown entrapped in the right lower lobe bronchus.

B) and it might be confused with metal marks for electrode.

Immediately after the detection of foreign body on chest radiography, fiberoptic bronchoscopy was performed. A metallic crown was found in the right lower lobe bronchus (Fig. 3), which was removed with a three-frog grasping forcep. The symptoms of pneumonia improved and the pneumonic infiltration disappeared in the chest radiograph, after the removal of the metallic foreign body following the administration of systemic antibiotics (Vancomycin) for 2 weeks.

The patient agreed that information concerning this case could be submitted for publication.

III. Discussion

We report a case of pneumonia due to an aspirated metallic crown, which had been detached from a molar tooth. After HFS under a spinal anesthesia, pneumonia postoperatively developed. Serial chest radiographs were carefully reviewed and a metallic foreign body was found in the right lower lobe bronchus, which was identified as a metallic crown and removed bronchoscopically. After the removal of the dental prosthesis, the pneumonia improved.

Although aspiration of foreign body can occur in all age groups, it mainly appears on infants or children.(5,6) In adults, altered mentality due to a neurologic disorder, alcohol, or sedative abuse, and dental procedure may contribute to foreign body aspiration.(7,8,9) Of them, tooth aspiration

into the airway can occur as one of the procedure-related complications during dental, or oropharyngeal procedure, and endotracheal intubation for general anesthesia.(7,8,10,11,12) However, to our knowledge, this is the first report of dental prosthesis aspiration following HFS under spinal anesthesia. In our patient, dental prosthesis and delirium following HFS was considered as a risk factor leading to the aspiration into the airway. From the review of daily checked chest radiographs, we found that the metallic material might be aspirated on the second day or third day after the operation. The material was first recognized on the postoperative day 5. Thus, the detection was delayed by 2 or 3 days.

There were several reasons for the delay. Our patient had been operated under a spinal anesthesia and no dental accident occurred during the operation. We did not have an idea about the possibility of aspirated dental prosthesis and evaluated patient's radiographs without care of that possibility. In addition, the radio-opaque of the aspirated dental prosthesis was confused with the metal marks for electrode for cardiac monitoring. Our patient was delirious postoperatively and communication with the patient was difficult. She did not mention the vanished dental material to our medical staffs.

Delirium is common in elderly patients after HFS, which is characterized by a change in mental status with attention and awareness deficits, and loss of cognitive and perceptible functions.(3,14) These patients are also vulnerable to postoperative pneumonia and frequently wear dental prosthesis including crown, brace and implant.

When elderly patient with delirium develops pneumonia postoperatively, patient's dental prosthesis should be checked and a careful review of chest radiograph is mandatory to rule out the possibility of aspirated dental prosthesis. A missed or delayed detection of dental prosthesis in the airway may be fatal to the patient.

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